FMC Technologies

Service Instructions

Syntron®

Electromagnetic Vibratory Feeder

Model: F-480-D-HP

Syntron® Electromagnetic Vibratory Feeder
Model: F-480-D-HP

Spring Replacement
Parts List
Coil and/or Core Replacement
Operating Specifications

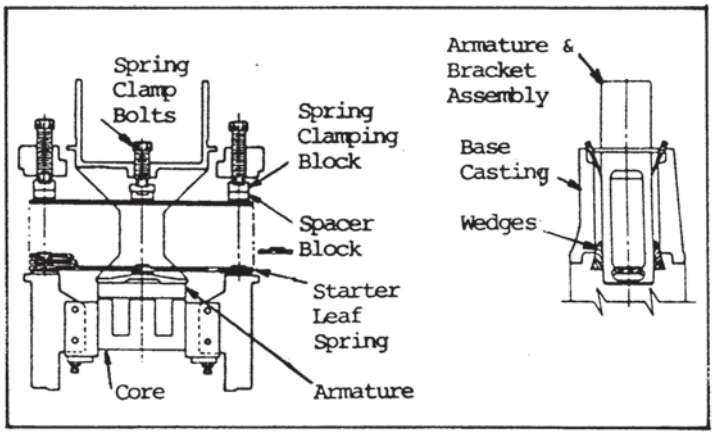
SPRING REPLACEMENT GUIDE

WARNING: Before performing any maintenance work the electrical supply must be disconnected at safety disconnect switch and locked out.

CAUTION: If the trough must be removed to gain access to the spring clamping bolts, first provide a means of supporting the trough and drive unit. The trough can be removed by removing the mounting bolts (M) located on the side of the wing plates.

1. Remove side covers (X), remove back cover (V). If the springs are replaced without separating the drive unit from the trough, slit the diaphram (G) to gain access to install hardwood wedges.

2. Hold armature bracket in alignment with the base casting by driving hardwood wedges between the armature bracket (F) and the base casting (T). This will ensure correct alignment of the replacement springs on the spring alignment bar (W).



3. Loosen the spring clamping bolts (K & N) enough to permit removal of the clamping blocks (P & Q). If necessary, use penetrating oil.

4. With the clamp blocks removed the leaf springs (R & S) can be removed and examined.

5. When installing new springs, the starter spring with spacers on BOTH SIDES must be placed in the spring cavity first, then the other springs will have a spacer on ONLY ONE SIDE . Insert these springs so the spacer side will contact the plain side of the previously placed spring.

6. With all springs installed and resting on the alignment bars (W) check alignment of armature bracket (F). The armature bracket should not be twisted within the base casting. The core and armature ”pole faces” should be parallel to each other.

7. Replace the center clamp blocks (Q) and center spring clamping bolt (K).

8. Replace the end clamp blocks (P) and tighten the end clamp bolts enough to hold the spring stack in position.

9. Torque center and the end spring clamping bolts (N) alternately to equalize the pressure across the springs.

10. Remove wooden wedges and replace trough, if removed.

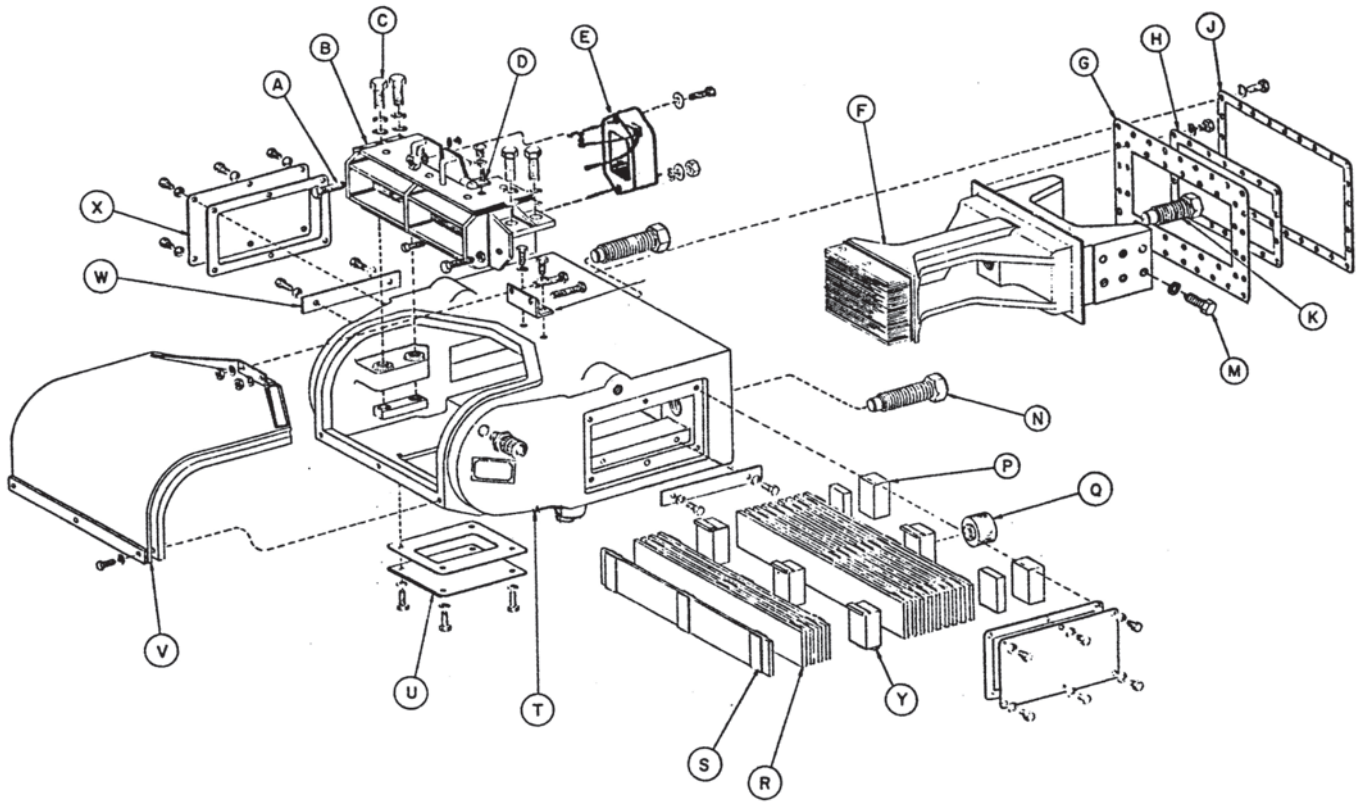
11. Adjust the air gap to .085". See the "Air Gap" section of Service Manual SM0560 or SM0571 for procedure.

12. Reconnect the power supply. After the unit has been operating for several hours, check clamping bolts for tightness.

CAUTION: Never oil the spring assembly!

TORQUE SPECIFICATIONS

ITEM	TORQUE VALUE DRY	TORQUE VALUE LUBRICATED
C	730 Ft-Lbs	540 Ft-Lbs
E	35 Ft-Lbs	------
M	375 Ft-Lbs	281 Ft-Lbs
K,N	------	2000 Ft-Lbs



PARTS LIST:

ITEM	DESCRIPTION	QTY	PART NO.
A	Set Screw, Sq. Hd. , Cup Pt. (3/4”-10 x 3”)	2	H0404000
	Hex Nut (3/4”-10)	2	H0105401
B	Core Assembly	1	B-129484
	Core Clamping Bar	2	A-52563
C	Cap Screw, Hex. Hd. Gr. 5 (1”-14 x 5 1/2”)	4	H0326001
	Lockwasher (1”)	4	H0114401
	Plainwasher H.S.(1”)	4	H0117962
D	Cable Clamp	1	0198X036
	Cap Screw, Hex Hd. (5/16”-18 x 1/2”)	1	H0306401
	Lockwasher (5/16”)	1	H0113001
	Ground Jumper	1	B-192419-E
	Wire Ties	2	0038X354
	Mach. Screw, Rd. Hd., Br. (1/4”-20 x 1/2”)	3	H0300802
	Lockwasher, Ext. Tooth (1/4”)	3	H0114904
E	Coil and Cable Assembly (460V/60 Cy)	1	C-192463-K
	Cap Screw, Hex Hd. (1/2”-13 x 6”)	2	H0317001
	Lockwasher Ext. Tooth (1/4”)	1	H0114904
	Locknut, ESNA (1/2”-13)	2	H0104005
	Plain Washer (1/2” x 1 3/8” O.D.)	2	H0117301
	Plain Washer (1/2” x 1 1/16” O.D.)	2	H0117310
F	Armature and Bracket Assembly	1	B-129493-B
	ΔArmature and Bracket Assembly	Only	B-129493-A
G	ΔDiaphram	1	B-26536
H	ΔDiaphram Clamp (Base Casting)	1	A-29159
	ΔCap Screw, Hex Hd. (3/8”-16 x 1”)	26	H0310201
	ΔLockwasher, Ext. Tooth (3/8”)	26	H0113204
J	ΔDiaphram Clamp (Armature Assembly)	1	B-29160
	ΔCap Screw, Hex Hd. (5/16”-18 x 1”)	18	H0307201
	ΔLockwasher (5/16”)	18	H0113001
M	Structural Bolt Hvy Hex (3/4”-10 x 1 3/4”)	12	H0524101
	Plain Washer H.S. (3/4”)	12	H0117762
K	Center Clamping Screw	1	A17809
N	End Clamping Screw	2	A-27851
P	End Clamp Block	2	A-18841-C
	End Spacer Block (2” Thk)		A-74575-A
	End Spacer Block (1 1/2” Thk)	2	A-74575-B
	End Spacer Block (1” Thk)	Only	A-74575-C
Q	Center Clamp Block	1	A-34790-C
	Center Spacer Block (1” Thick)	1	A-19090-A
	Center Spacer Block (2” Thick)	Only	A-19090-B
R	Leaf Spring (5/8” Tk.)	13	B-212023-A
	Leaf Spring , tuning (1/2” Tk.)	If Req’d.	A-72634
S	End Leaf Spring (5/8” Tk.)	1	B-212022-A

PARTS LIST (cont.)

ITEM	DESCRIPTION	QTY	PART NO.
T	Base Casting	1	D-122367-B
	∆Base Casting	Only	D-122367-A
	Cable Grip	1	0102X072
	Bracket	1	A-73726
	Cap Screw, Hex Hd. (1/2”-13 x 1”)	2	H0315001
	Lockwasher (1/2”)	2	H0113601
	■Name Plate	1	A-97298
	Drive Screw, P.K. Ty U (#2 x 3/16”)	4	H0430600
V	Bottom Cover	1	A-79566
	Bottom Cover Gasket	1	A-79568
	Cap Screw, Hex Hd. (1/2”-13 x 1”)	4	H0315001
	Lockwasher (1/2”)	4	H0113601
	Cap Screw, Hex Hd. (1/2”-13 x 4 1/2”)	2	H0316801
	Hex Nut (1/2”-13)	2	H0104001
	Lockwasher (1/2”)	2	H0113601
W	Spring Aligning Bar	2	B218286-001
	Cap Screw, Hex Hd. (3/8”-16 x 1”)	4	H0310201
	Lockwasher, Ext. Tooth (3/8”)	4	H0113204
X	∆Side Cover	2	B-75040
	∆Side Cover Gasket	2	A-95696
	∆Cap Screw, Hex Hd. (3/8”-16 x 1”)	12	H0310201
	∆Lockwasher (3/8”)	12	H0113204
Y	Spring Spacer Block (2” Tk.)		A-91381-A
	Spring Spacer Block (1 1/2” Tk.)	If Req’d.	A-91381-B
	Spring Spacer Block (1” Tk.)		A-91381-C
	Spring Spacer Block (1 1/4” Tk.)		A-91381-D

∆Used on Dust-Tight Units Only.

■ Do not remove or paint over safety labels. Should safety labels require replacement, contact FMC Technologies Material Handling Equipment Division, Tupelo, MS at (662) 869-5711 for an additional supply free of charge.

OPERATING SPECIFICATIONS

Maximum trough weight:	999 Lbs.	1000 to 1155 Lbs.
Trough stroke range: (Max. Trough Weight)	.075” TO .080”	.070” TO .075”
Minimum Natural Frequency:	4000 VPM (60 Cy)	4000VPM (60 Cy)
*Maximum Current Rating: (nameplate)	31.5 Amps (460V/60 Cy) 25.5 Amps (575V/60 Cy)	31.5 Amps (460V/60 Cy) 25.5 Amps (575V/60 Cy)
Nominal Static Air Gap:	.085”	.085”

* When reading the current of the unit by using a tong meter, the meter reading must always be multiplied by a value of 1.7. A tong meter does not reveal the same current as stamped on the equipment nameplate due to the waveform characteristics of the feeder, when operating. Therefore the 1.7 multiplier must be used. All current readings must be taken at the controller.

COIL AND/OR CORE REPLACEMENT

WARNING: Before performing any maintenance work, the electrical power supply must be disconnected at the safety disconnect switch and locked out.

1. Remove back cover (V) and bottom cover (U).
2. Loosen hex nut on set screw (A) and remove set screws.
3. Disconnect cable assembly from the power supply, loosen cable grip (T) and pull cable through cable grip into the base casting.
4. Remove the four (4) core clamping bolts from core assembly (B) and core clamping bar.
5. Carefully removing the core and coil as a single unit.

CAUTION: The magnet assembly weighs approximately 300 pounds. Use a lifting device. To safely remove core, lifting lugs are provided.

6. Observe size and location washers used to attach the coil and connect the ground wire. Larger diameter washers are used on underside of coil.
7. Remove the coil (E) from the core (B).
8. With the core upright and all washers and in their original location, lower the replacement coil onto the core.
9. If either coil mounting lug shows a space between it and the washer(s), add extra washer(s) (shim) to close the space.

10. Attach the coil to the core, using existing bolts, washers, and locknuts. Torque locknuts to specifications on page 3.

11. Connect the green ground lead to core at its original location. Be sure to locate the shakeproof lockwasher between the terminal and the core.

12. Replace core and coil into the base casting. Insure ground connection between core and base casting is securely connected.

13. Replace core mounting bolts and core mounting bars.

14. Close air gap so that pole faces of magnet and armature are in contact. Snug down the clamping bolts to hold the core in place to offer some resistance when turning in the set screws to adjust the air gap. Check from both top and bottom that core and armature ”faces” are parallel.

15. Insert cable through cable grip, tighten cable grip and reconnect cable leads to the power supply. Ensure ground connection between core and base casting is securely connected.

16. Adjust air gap to .085” See ”The Air Gap” section of Service Manual No. SM0560 or SM0571 for procedure.

17. Torque the core clamping bolts as shown on page 3.

18. Replace the back cover and bottom cover.

19. Check trough stroke – maximum allowable is .080”.

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